Sequence Listing

<110> Botstein,David
    Desnoyers,Luc
    Ferrara,Napoleone
    Fong,Sherman
    Gao,Wei-Qiang
    Goddard,Audrey
    Gurney,Austin L.
    Pan,James
    Roy,Margaret Ann
    Stewart,Timothy A.
    Tumas,Daniel
    Watanabe,Colin K.
    Wood,William I.

<120> Secreted and Transmembrane Polypeptides and Nucleic
    Acids Encoding the Same

<130> P2930R1C2

<150> 60/095,325
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<140> US 09/866,034
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<213> Homo sapiens

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 cgggatgacc cgccgggacc cgctcgcaaa taaggtggcc ctggtaacgg 150

 cctccaccga cgggatcggc ttcgccatcg cccggcgttt ggcccaggac 200

 ggggcccatg tggtcgtcag cagccggaag cagcagaatg tggaccaggc 250

 ggtggccacg ctgcagggg aggggctgag cgtgacgggc accgtgtgcc 300

 atgtggggaa ggcggaggac cgggagcggc tggtggccac ggctgtgaag 350
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cttcatggag gtatcgatat cctagtctcc aatgctgctg tcaacccttt 400

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acattaatgt gaaggcccca gccctgatga caaaggcagt ggtgccagaa 500

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gctctggatg gacaaggaaa aagaggaaag catgaaagaa accctgcgga 750

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ttgggctcta gctcctggtg ctgttcctgc attcacccac tggcctttcc 950

cacctctgct caccttactg ttcacctcat caaatcagtt ctgccctgtg 1000

aaaagatcca gccttccctg ccgtcaaggt ggcgtcttac tcgggattcc 1050

tgctgttgtt gtggccttgg gtaaaggcct cccctgagaa cacaggacag 1100

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                20                  25                  30

Ala Asn Lys Val Ala Leu Val Thr Ala Ser Thr Asp Gly Ile Gly
                    35                  40                  45

Phe Ala Ile Ala Arg Arg Leu Ala Gln Asp Gly Ala His Val Val
                    50                  55                  60

Val Ser Ser Arg Lys Gln Gln Asn Val Asp Gln Ala Val Ala Thr
                    65                  70                  75
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Leu Gln Gly Glu Gly Leu Ser Val Thr Gly Thr Val Cys His Val
                80                  85                  90

Gly Lys Ala Glu Asp Arg Glu Arg Leu Val Ala Thr Ala Val Lys
                95                 100                 105

Leu His Gly Gly Ile Asp Ile Leu Val Ser Asn Ala Ala Val Asn
               110                 115                 120

Pro Phe Phe Gly Ser Ile Met Asp Val Thr Glu Glu Val Trp Asp
               125                 130                 135

Lys Thr Leu Asp Ile Asn Val Lys Ala Pro Ala Leu Met Thr Lys
               140                 145                 150

Ala Val Val Pro Glu Met Glu Lys Arg Gly Gly Gly Ser Val Val
               155                 160                 165

Ile Val Ser Ser Ile Ala Ala Phe Ser Pro Ser Pro Gly Phe Ser
               170                 175                 180

Pro Tyr Asn Val Ser Lys Thr Ala Leu Leu Gly Leu Thr Lys Thr
               185                 190                 195

Leu Ala Ile Glu Leu Ala Pro Arg Asn Ile Arg Val Asn Cys Leu
               200                 205                 210

Ala Pro Gly Leu Ile Lys Thr Ser Phe Ser Arg Met Leu Trp Met
               215                 220                 225

Asp Lys Glu Lys Glu Glu Ser Met Lys Glu Thr Leu Arg Ile Arg
               230                 235                 240

Arg Leu Gly Glu Pro Glu Asp Cys Ala Gly Ile Val Ser Phe Leu
               245                 250                 255

Cys Ser Glu Asp Ala Ser Tyr Ile Thr Gly Glu Thr Val Val Val
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Gly Gly Gly Thr Pro Ser Arg Leu
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<210> 4
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<223> Synthetic Oligonucleotide Probe

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<210> 5
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<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Oligonucleotide Probe

<400> 5
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<212> DNA
<213> Homo sapiens

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 agaaccgaga ctttctggct gcgctggagg acgccatgga gcagtacaaa 200

 ctgcagagcg accggctgcg tgagcagcag gaggagatgg tggaactgcg 250

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 gggggtgccc acgcccatgt gctgggcatg gtgccgcctg cctgcctccc 400

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 gggaggctgg agctgagttg ctgactgagg tgaacaggct gggaagtggc 500

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5

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gttccgcagg agggtcgctg cggcccagag ccaggtgcag gtgctgaagg 1050

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aagcatgagc aacagcagaa gatcctgaag attaagacgg aagagatcgc 1300

ggccttccag aggaagaggc gcagtggcag caacggctct gtggtcagcc 1350

tggaacagca gcagaagatt gaggagcaga agaagtggct ggaccaggag 1400

atggagaagg tgctacagca gcggcgggcg ctggaggagc tgggggagga 1450

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agaagacggg gctggagagc aagcgcctga gatccagcca ggccctcaac 1550

gaggacatcg tgcgagtgtc cagccggctg gagcacctgg agaaggagct 1600

gtccgagaag agcgggcagc tgcggcaggg cagcgcccag agccagcagc 1650

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ggataaacca ggaactgaaa cagaagctcg gcggtgtgaa cgctgtaggc 2300

cacagcaggg gtggggagaa gaggagcctg tgctcggagg gcagacaggc 2350
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6

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tcatttaaca aaataatatg caaattccca ccacttactt ccatgaagct 2900

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aaaaaaaatc tttgaaggga c 3121
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<210> 7
<211> 830
<212> PRT
<213> Homo sapiens

<400> 7

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Glu Glu Met Val Glu Leu Arg Leu Arg Leu Glu Leu Val Arg Pro
                20                  25                  30

Gly Trp Gly Gly Leu Arg Leu Leu Asn Gly Leu Pro Pro Gly Ser
                35                  40                  45

Phe Val Pro Arg Pro His Thr Ala Pro Leu Gly Gly Ala His Ala
                50                  55                  60

His Val Leu Gly Met Val Pro Pro Ala Cys Leu Pro Gly Asp Glu
                65                  70                  75

Val Gly Ser Glu Gln Arg Gly Glu Gln Val Thr Asn Gly Arg Glu
                80                  85                  90

Ala Gly Ala Glu Leu Leu Thr Glu Val Asn Arg Leu Gly Ser Gly
                95                  100                 105
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7

Ser Ser Ala Ala Ser Glu Glu Glu Glu Glu Glu Glu Pro Pro
                110   115   120

Arg Arg Thr Leu His Leu Arg Arg Asn Arg Ile Ser Asn Cys Ser
                125   130   135

Gln Arg Ala Gly Ala Arg Pro Gly Ser Leu Pro Glu Arg Lys Gly
                140   145   150

Pro Glu Leu Cys Leu Glu Glu Leu Asp Ala Ala Ile Pro Gly Ser
                155   160   165

Arg Ala Val Gly Gly Ser Lys Ala Arg Val Gln Ala Arg Gln Val
                170   175   180

Pro Pro Ala Thr Ala Ser Glu Trp Arg Leu Ala Gln Ala Gln Gln
                185   190   195

Lys Ile Arg Glu Leu Ala Ile Asn Ile Arg Met Lys Glu Glu Leu
                200   205   210

Ile Gly Glu Leu Val Arg Thr Gly Lys Ala Ala Gln Ala Leu Asn
                215   220   225

Arg Gln His Ser Gln Arg Ile Arg Glu Leu Glu Gln Glu Ala Glu
                230   235   240

Gln Val Arg Ala Glu Leu Ser Glu Gly Gln Arg Gln Leu Arg Glu
                245   250   255

Leu Glu Gly Lys Glu Leu Gln Asp Ala Gly Glu Arg Ser Arg Leu
                260   265   270

Gln Glu Phe Arg Arg Arg Val Ala Ala Ala Gln Ser Gln Val Gln
                275   280   285

Val Leu Lys Glu Lys Lys Gln Ala Thr Glu Arg Leu Val Ser Leu
                290   295   300

Ser Ala Gln Ser Glu Lys Arg Leu Gln Glu Leu Glu Arg Asn Val
                305   310   315

Gln Leu Met Arg Gln Gln Gly Gln Leu Gln Arg Arg Leu Arg
                320   325   330

Glu Glu Thr Glu Gln Lys Arg Arg Leu Glu Ala Glu Met Ser Lys
                335   340   345

Arg Gln His Arg Val Lys Glu Leu Glu Leu Lys His Glu Gln Gln
                350   355   360

Gln Lys Ile Leu Lys Ile Lys Thr Glu Glu Ile Ala Ala Phe Gln
                365   370   375

Arg Lys Arg Arg Ser Gly Ser Asn Gly Ser Val Val Ser Leu Glu
                380   385   390

Gln Gln Gln Lys Ile Glu Glu Gln Lys Lys Trp Leu Asp Gln Glu

8

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Met Glu Lys Val Leu Gln Gln Arg Arg Ala Leu Glu Glu Leu Gly
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Glu Glu Leu His Lys Arg Glu Ala Ile Leu Ala Lys Lys Glu Ala
                425                  430                  435

Leu Met Gln Glu Lys Thr Gly Leu Glu Ser Lys Arg Leu Arg Ser
                440                  445                  450

Ser Gln Ala Leu Asn Glu Asp Ile Val Arg Val Ser Ser Arg Leu
                455                  460                  465

Glu His Leu Glu Lys Glu Leu Ser Glu Lys Ser Gly Gln Leu Arg
                470                  475                  480

Gln Gly Ser Ala Gln Ser Gln Gln Gln Ile Arg Gly Glu Ile Asp
                485                  490                  495

Ser Leu Arg Gln Glu Lys Asp Ser Leu Leu Lys Gln Arg Leu Glu
                500                  505                  510

Ile Asp Gly Lys Leu Arg Gln Gly Ser Leu Leu Ser Pro Glu Glu
                515                  520                  525

Glu Arg Thr Leu Phe Gln Leu Asp Glu Ala Ile Glu Ala Leu Asp
                530                  535                  540

Ala Ala Ile Glu Tyr Lys Asn Glu Ala Ile Thr Cys Arg Gln Arg
                545                  550                  555

Val Leu Arg Ala Ser Ala Ser Leu Leu Ser Gln Cys Glu Met Asn
                560                  565                  570

Leu Met Ala Lys Leu Ser Tyr Leu Ser Ser Ser Glu Thr Arg Ala
                575                  580                  585

Leu Leu Cys Lys Tyr Phe Asp Lys Val Val Thr Leu Arg Glu Glu
                590                  595                  600

Gln His Gln Gln Gln Ile Ala Phe Ser Glu Leu Glu Met Gln Leu
                605                  610                  615

Glu Glu Gln Gln Arg Leu Val Tyr Trp Leu Glu Val Ala Leu Glu
                620                  625                  630

Arg Gln Arg Leu Glu Met Asp Arg Gln Leu Thr Leu Gln Gln Lys
                635                  640                  645

Glu His Glu Gln Asn Met Gln Leu Leu Leu Gln Gln Ser Arg Asp
                650                  655                  660

His Leu Gly Glu Gly Leu Ala Asp Ser Arg Arg Gln Tyr Glu Ala
                665                  670                  675

Arg Ile Gln Ala Leu Glu Lys Glu Leu Gly Arg Tyr Met Trp Ile
                680                  685                  690
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9

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Asn Gln Glu Leu Lys Gln Lys Leu Gly Gly Val Asn Ala Val Gly
            695             700             705

His Ser Arg Gly Gly Glu Lys Arg Ser Leu Cys Ser Glu Gly Arg
            710             715             720

Gln Ala Pro Gly Asn Glu Asp Glu Leu His Leu Ala Pro Glu Leu
            725             730             735

Leu Trp Leu Ser Pro Leu Thr Glu Gly Ala Pro Arg Thr Arg Glu
            740             745             750

Glu Thr Arg Asp Leu Val His Ala Pro Leu Pro Leu Thr Trp Lys
            755             760             765

Arg Ser Ser Leu Cys Gly Glu Glu Gln Gly Ser Pro Glu Glu Leu
            770             775             780

Arg Gln Arg Glu Ala Ala Glu Pro Leu Val Gly Arg Val Leu Pro
            785             790             795

Val Gly Glu Ala Gly Leu Pro Trp Asn Phe Gly Pro Leu Ser Lys
            800             805             810

Pro Arg Arg Glu Leu Arg Arg Ala Ser Pro Gly Met Ile Asp Val
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Arg Lys Asn Pro Leu
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<210> 8
<211> 662
<212> DNA
<213> Homo sapiens

<400> 8
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acagacgctc ctgttggctc aggactgtgg ctgtgccagc cgacacccag  150

gtgtgggaac aagatctaca acccttcaga gcagtgctgt tatgatgatg  200

ccatcttatc cttaaaggag acccgccgct gtggctccac ctgcaccttc  250

tggccctgct ttgagctctg ctgtcccgag tcttttggcc cccagcagaa  300

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ctcccatctc ccggagctgt accaggaaca ggaggcacgt cctgtaccca  400

taaaaacccc aggctccact ggcagacggc agacaagggg agaagagacg  450

aagcagctgg acatcggaga ctacagttga acttcggaga gaagcaactt  500

gacttcagag ggatggctca atgacatagc tttggagagg agcccagctg  550
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10

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gggatggcca gacttcaggg gaagaatgcc ttcctgcttc atcccctttc 600

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catttaccat ct 662
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<210> 9
<211> 125
<212> PRT
<213> Homo sapiens

<400> 9
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 Met Arg Pro Arg Cys Cys Ile Leu Ala Leu Val Cys Trp Ile Thr
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                 20                  25                  30

 Gly Ser Gly Leu Trp Leu Cys Gln Pro Thr Pro Arg Cys Gly Asn
                 35                  40                  45

 Lys Ile Tyr Asn Pro Ser Glu Gln Cys Cys Tyr Asp Asp Ala Ile
                 50                  55                  60

 Leu Ser Leu Lys Glu Thr Arg Arg Cys Gly Ser Thr Cys Thr Phe
                 65                  70                  75

 Trp Pro Cys Phe Glu Leu Cys Cys Pro Glu Ser Phe Gly Pro Gln
                 80                  85                  90

 Gln Lys Phe Leu Val Lys Leu Arg Val Leu Gly Met Lys Ser Gln
                 95                  100                 105

 Cys His Leu Ser Pro Ile Ser Arg Ser Cys Thr Arg Asn Arg Arg
                 110                 115                 120

 His Val Leu Tyr Pro
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<210> 10
<211> 1942
<212> DNA
<213> Homo sapiens

<400> 10
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 ctgccgggtc tggagagctc cccgaacccc tccgcggaga ggagcgaggc 150

 ggcgccaggg tggcccccgg ggcgcgcttg gtctcggaga agcggggacg 200

 aggccggagg atgagcgact gagggcgacg cgggcactga cgcgagttgg 250

 ggccgcgact accggcagct gacagcgcga tgagcgactc cccagagacg 300

 ccctagcccg gtgtgcgcgc caggcggagc gcgcaggtgg ggctgggctg 350
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caacccgggc ccgcgcccgc cgctgctacc cctgcgcccg ctgcgagccc 450

ggcgtccggc ccgcgccctg cgctcatgga cggcggctcc cggctggcgg 500

cggcgcgccc ccgggctgtg aatgcgactc gcccctcggc cgcgctcccc 550

gcccgcccgc ccgccgggac gtggtagggg atgcccagct ccactgcgat 600

ggcagttggc gcgctctcca gttccctcct ggtcacctgc tgcctgatgg 650

tggctctgtg cagtccgagc atcccgctgg agaagctggc ccaggcacca 700

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ggatctgcag gtccggcccc gcggggacac cccgcaggcg gaagccctgg 950

ccgcagccgc ccaggacgcg attggcccgg aactcgcgcc cacgcccgag 1000

ccacccgagg agtacgtgta cccggactac cgtggcaagg gctgcgtgga 1050

cgagagcggc ttcgtgtacg cgatcgggga gaagttcgcg ccgggcccct 1100

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tactgatgtg aacattctag atgactctgg gaactatcag tcaaagaaga 1650

cttttgatga ggaataatgg aaaattgttg gtacttttcc ttttcttgat 1700

aacagttact acaacagaag gaaatggata tatttcaaaa catcaacaag 1750

aactttgggc ataaaatcct tctctaaata aatgtgctat tttcacagta 1800
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12

agtacacaaa agtacactat tatatatcaa atgtatttct ataatccctc 1850

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gtgttgtcaa ccgtcaaaaa aaaaaaaaaa aaaaaaaaaa aa 1942

<210> 11
<211> 325
<212> PRT
<213> Homo sapiens

<400> 11
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Leu Leu Val Thr Cys Cys Leu Met Val Ala Leu Cys Ser Pro Ser
                20                  25                  30

Ile Pro Leu Glu Lys Leu Ala Gln Ala Pro Glu Gln Pro Gly Gln
                35                  40                  45

Glu Lys Arg Glu His Ala Thr Arg Asp Gly Pro Gly Arg Val Asn
                50                  55                  60

Glu Leu Gly Arg Pro Ala Arg Asp Glu Gly Gly Ser Gly Arg Asp
                65                  70                  75

Trp Lys Ser Lys Ser Gly Arg Gly Leu Ala Gly Arg Glu Pro Trp
                80                  85                  90

Ser Lys Leu Lys Gln Ala Trp Val Ser Gln Gly Gly Gly Ala Lys
                95                  100                 105

Ala Gly Asp Leu Gln Val Arg Pro Arg Gly Asp Thr Pro Gln Ala
                110                 115                 120

Glu Ala Leu Ala Ala Ala Ala Gln Asp Ala Ile Gly Pro Glu Leu
                125                 130                 135

Ala Pro Thr Pro Glu Pro Pro Glu Glu Tyr Val Tyr Pro Asp Tyr
                140                 145                 150

Arg Gly Lys Gly Cys Val Asp Glu Ser Gly Phe Val Tyr Ala Ile
                155                 160                 165

Gly Glu Lys Phe Ala Pro Gly Pro Ser Ala Cys Pro Cys Leu Cys
                170                 175                 180

Thr Glu Glu Gly Pro Leu Cys Ala Gln Pro Glu Cys Pro Arg Leu
                185                 190                 195

His Pro Arg Cys Ile His Val Asp Thr Ser Gln Cys Cys Pro Gln
                200                 205                 210

Cys Lys Glu Arg Lys Asn Tyr Cys Glu Phe Arg Gly Lys Thr Tyr
                215                 220                 225

Gln Thr Leu Glu Glu Phe Val Val Ser Pro Cys Glu Arg Cys Arg
```

13

```
                230                     235                    240

     Cys Glu Ala Asn Gly Glu Val Leu Cys Thr Val Ser Ala Cys Pro
                     245                250                    255

     Gln Thr Glu Cys Val Asp Pro Val Tyr Glu Pro Asp Gln Cys Cys
                     260                265                    270

     Pro Ile Cys Lys Asn Gly Pro Asn Cys Phe Ala Glu Thr Ala Val
                     275                280                    285

     Ile Pro Ala Gly Arg Glu Val Lys Thr Asp Glu Cys Thr Ile Cys
                     290                295                    300

     His Cys Thr Tyr Glu Glu Gly Thr Trp Arg Ile Glu Arg Gln Ala
                     305                310                    315

     Met Cys Thr Arg His Glu Cys Arg Gln Met
                     320                325
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<210> 12
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Oligonucleotide Probe

<400> 12
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<210> 13
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Oligonucleotide Probe

<400> 13
 cgctcgattc tccatgtgcc ttcc 24

<210> 14
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Oligonucleotide Probe

<400> 14
 gacggagtgt gtggaccctg tgtacgagcc tgatcagtgc tgtcc 45

<210> 15
<211> 1587
<212> DNA
<213> Homo sapiens

14

<400> 15

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tcatcctccc actgccagga gtgcaggcgc tgctctgcca gtttgggaca 100

gttcagcatg tgtggaaggt gtccgaccta ccccggcaat ggacccctaa 150

gaacaccagc tgcgacagcg gcttggggtg ccaggacacg ttgatgctca 200

ttgagagcgg accccaagtg agcctggtgc tctccaaggg ctgcacggag 250

gccaaggacc aggagccccg cgtcactgag caccggatgg gccccggcct 300

ctccctgatc tcctacacct tcgtgtgccg ccaggaggac ttctgcaaca 350

acctcgttaa ctccctcccg ctttgggccc cacagccccc agcagaccca 400

ggatccttga ggtgcccagt ctgcttgtct atggaaggct gtctggaggg 450

gacaacagaa gagatctgcc ccaaggggac cacacactgt tatgatggcc 500

tcctcaggct caggggagga ggcatcttct ccaatctgag agtccaggga 550

tgcatgcccc agccaggttg caacctgctc aatgggacac aggaaattgg 600

gcccgtgggt atgactgaga actgcaatag gaaagatttt ctgacctgtc 650

atcgggggac caccattatg acacacggaa acttggctca agaacccact 700

gattggacca catcgaatac cgagatgtgc gaggtggggc aggtgtgtca 750

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tggtggggag tggtttgccc ttcctgctaa ctctattacc cccacgattc 1350

ttcaccgctg ctgaccaccc acactcaacc tccctctgac ctcataacct 1400

aatggccttg gacaccagat tctttcccat tctgtccatg aatcatcttc 1450
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15

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cccacacaca atcattcata tctactcacc taacagcaac actggggaga 1500

gcctggagca tccggacttg ccctatggga gaggggacgc tggaggagtg 1550

gctgcatgta tctgataata cagaccctgt cctttca 1587
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<210> 16
<211> 437
<212> PRT
<213> Homo sapiens

<400> 16
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Met Ser Ala Val Leu Leu Leu Ala Leu Leu Gly Phe Ile Leu Pro
 1               5                  10                  15

Leu Pro Gly Val Gln Ala Leu Leu Cys Gln Phe Gly Thr Val Gln
                20                  25                  30

His Val Trp Lys Val Ser Asp Leu Pro Arg Gln Trp Thr Pro Lys
                35                  40                  45

Asn Thr Ser Cys Asp Ser Gly Leu Gly Cys Gln Asp Thr Leu Met
                50                  55                  60

Leu Ile Glu Ser Gly Pro Gln Val Ser Leu Val Leu Ser Lys Gly
                65                  70                  75

Cys Thr Glu Ala Lys Asp Gln Glu Pro Arg Val Thr Glu His Arg
                80                  85                  90

Met Gly Pro Gly Leu Ser Leu Ile Ser Tyr Thr Phe Val Cys Arg
                95                  100                 105

Gln Glu Asp Phe Cys Asn Asn Leu Val Asn Ser Leu Pro Leu Trp
                110                 115                 120

Ala Pro Gln Pro Pro Ala Asp Pro Gly Ser Leu Arg Cys Pro Val
                125                 130                 135

Cys Leu Ser Met Glu Gly Cys Leu Glu Gly Thr Thr Glu Glu Ile
                140                 145                 150

Cys Pro Lys Gly Thr Thr His Cys Tyr Asp Gly Leu Leu Arg Leu
                155                 160                 165

Arg Gly Gly Gly Ile Phe Ser Asn Leu Arg Val Gln Gly Cys Met
                170                 175                 180

Pro Gln Pro Gly Cys Asn Leu Leu Asn Gly Thr Gln Glu Ile Gly
                185                 190                 195

Pro Val Gly Met Thr Glu Asn Cys Asn Arg Lys Asp Phe Leu Thr
                200                 205                 210

Cys His Arg Gly Thr Thr Ile Met Thr His Gly Asn Leu Ala Gln
                215                 220                 225

Glu Pro Thr Asp Trp Thr Thr Ser Asn Thr Glu Met Cys Glu Val
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16

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                    230                     235                     240
    Gly Gln Val Cys Gln Glu Thr Leu Leu Leu Ile Asp Val Gly Leu
                    245                     250                     255
    Thr Ser Thr Leu Val Gly Thr Lys Gly Cys Ser Thr Val Gly Ala
                    260                     265                     270
    Gln Asn Ser Gln Lys Thr Thr Ile His Ser Ala Pro Pro Gly Val
                    275                     280                     285
    Leu Val Ala Ser Tyr Thr His Phe Cys Ser Ser Asp Leu Cys Asn
                    290                     295                     300
    Ser Ala Ser Ser Ser Ser Val Leu Leu Asn Ser Leu Pro Pro Gln
                    305                     310                     315
    Ala Ala Pro Val Pro Gly Asp Arg Gln Cys Pro Thr Cys Val Gln
                    320                     325                     330
    Pro Leu Gly Thr Cys Ser Ser Gly Ser Pro Arg Met Thr Cys Pro
                    335                     340                     345
    Arg Gly Ala Thr His Cys Tyr Asp Gly Tyr Ile His Leu Ser Gly
                    350                     355                     360
    Gly Gly Leu Ser Thr Lys Met Ser Ile Gln Gly Cys Val Ala Gln
                    365                     370                     375
    Pro Ser Ser Phe Leu Leu Asn His Thr Arg Gln Ile Gly Ile Phe
                    380                     385                     390
    Ser Ala Arg Glu Lys Arg Asp Val Gln Pro Pro Ala Ser Gln His
                    395                     400                     405
    Glu Gly Gly Gly Ala Glu Gly Leu Glu Ser Leu Thr Trp Gly Val
                    410                     415                     420
    Gly Leu Ala Leu Ala Pro Ala Leu Trp Trp Gly Val Val Cys Pro
                    425                     430                     435
    Ser Cys
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<210> 17
<211> 2387
<212> DNA
<213> Homo sapiens

<400> 17
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cgacgatgct acgcgcgccc ggctgcctcc tccggacctc cgtagcgcct 50

gccgcggccc tggctgcggc gctgctctcg tcgcttgcgc gctgctctct 100

tctagagccg agggacccgg tggcctcgtc gctcagcccc tatttcggca 150

ccaagactcg ctacgaggat gtcaaccccg tgctattgtc gggccccgag 200
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gctccgtggc gggaccctga gctgctggag gggacctgca ccccggtgca 250

gctggtcgcc ctcattcgcc acggcacccg ctaccccacg gtcaaacaga 300

tccgcaagct gaggcagctg cacgggttgc tgcaggcccg cgggtccagg 350

gatggcgggg ctagtagtac cggcagccgc gacctgggtg cagcgctggc 400

cgactggcct ttgtggtacg cggactggat ggacgggcag ctagtagaga 450

agggacggca ggatatgcga cagctggcgc tgcgtctggc ctcgctcttc 500

ccggcccttt tcagccgtga gaactacggc cgcctgcggc tcatcaccag 550

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ggcagcacta ccaccctggc ttgccgccgc cggacgtcgc agatatggag 650

tttggacctc caacagttaa tgataaacta atgagatttt ttgatcactg 700

tgagaagttt ttaactgaag tagaaaaaaa tgctacagct ctttatcacg 750

tggaagcctt caaaactgga ccagaaatgc agaacatttt aaaaaaagtt 800

gcagctactt tgcaagtgcc agtaaatgat ttaaatgcag atttaattca 850

agtagccttt ttcacctgtt catttgacct ggcaattaaa ggtgttaaat 900

ctccttggtg tgatgttttt gacatagatg atgcaaaggt attagaatat 950

ttaaatgatc tgaaacaata ttggaaaaga ggatatgggt atactattaa 1000

cagtcgatcc agctgcacct tgtttcagga tatctttcag cacttggaca 1050

aagcagttga acagaaacaa aggtctcagc caatttcttc tccagtcatc 1100

ctccagtttg gtcatgcaga gactcttctt ccactgcttt ctctcatggg 1150

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tgcatcggaa gttccgaagt ggtctcattg taccttatgc ctcgaacctg 1250

atatttgtgc tttaccactg tgaaaatgct aagactccta agaacaatt 1300

ccgagtgcag atgttattaa atgaaaaggt gttacctttg gcttactcac 1350

aagaaactgt ttcattttat gaagatctga gaaccacta caaggacatc 1400

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attgggtttc tctctgggtt tggacatgaa atgtaagaaa agatttttca 1650
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18

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ctggagcagc tctcttaagg agaaacaaat ctatttagag aaacagctgg 1700

ccctgcaaat gtttacagaa atgaaattct tcctacttat ataagaaatc 1750

tcacactgag atagaattgt gatttcataa taacacttga aaagtgctgg 1800

agtaacaaaa tatctcagtt ggaccatcct taacttgatt gaactgtcta 1850

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cagctctagc attttcttaa tcaggaatat tgtggtaagc tgggagtatc 1950

actctggaag aaagtaacat ctccagatga gaatttgaaa caagaaacag 2000

agtgttgtaa aaggacacct tcactgaagc aagtcggaaa gtacaatgaa 2050

aataaatatt tttggtattt atttatgaaa tatttgaaca tttttttcaat 2100

aattcctttt tacttctagg aagtctcaaa agaccatctt aaattattat 2150

atgtttggac aattagcaac aagtcagata gttagaatcg aagtttttca 2200

aatccattgc ttagctaact ttttcattct gtcacttggc ttcgattttt 2250

atattttcct attatatgaa atgtatcttt tggttgtttg atttttcttt 2300

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ctataataaa gaaaattctt gtgactttaa aaaaaaa 2387
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<210> 18
<211> 487
<212> PRT
<213> Homo sapiens

<400> 18
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Met Leu Arg Ala Pro Gly Cys Leu Leu Arg Thr Ser Val Ala Pro
1               5                   10                  15

Ala Ala Ala Leu Ala Ala Ala Leu Leu Ser Ser Leu Ala Arg Cys
                20                  25                  30

Ser Leu Leu Glu Pro Arg Asp Pro Val Ala Ser Ser Leu Ser Pro
                35                  40                  45

Tyr Phe Gly Thr Lys Thr Arg Tyr Glu Asp Val Asn Pro Val Leu
                50                  55                  60

Leu Ser Gly Pro Glu Ala Pro Trp Arg Asp Pro Glu Leu Leu Glu
                65                  70                  75

Gly Thr Cys Thr Pro Val Gln Leu Val Ala Leu Ile Arg His Gly
                80                  85                  90

Thr Arg Tyr Pro Thr Val Lys Gln Ile Arg Lys Leu Arg Gln Leu
                95                  100                 105

His Gly Leu Leu Gln Ala Arg Gly Ser Arg Asp Gly Gly Ala Ser
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19

                    110   115   120

Ser Thr Gly Ser Arg Asp Leu Gly Ala Ala Leu Ala Asp Trp Pro
                    125   130   135

Leu Trp Tyr Ala Asp Trp Met Asp Gly Gln Leu Val Glu Lys Gly
                    140   145   150

Arg Gln Asp Met Arg Gln Leu Ala Leu Arg Leu Ala Ser Leu Phe
                    155   160   165

Pro Ala Leu Phe Ser Arg Glu Asn Tyr Gly Arg Leu Arg Leu Ile
                    170   175   180

Thr Ser Ser Lys His Arg Cys Met Asp Ser Ser Ala Ala Phe Leu
                    185   190   195

Gln Gly Leu Trp Gln His Tyr His Pro Gly Leu Pro Pro Pro Asp
                    200   205   210

Val Ala Asp Met Glu Phe Gly Pro Pro Thr Val Asn Asp Lys Leu
                    215   220   225

Met Arg Phe Phe Asp His Cys Glu Lys Phe Leu Thr Glu Val Glu
                    230   235   240

Lys Asn Ala Thr Ala Leu Tyr His Val Glu Ala Phe Lys Thr Gly
                    245   250   255

Pro Glu Met Gln Asn Ile Leu Lys Lys Val Ala Ala Thr Leu Gln
                    260   265   270

Val Pro Val Asn Asp Leu Asn Ala Asp Leu Ile Gln Val Ala Phe
                    275   280   285

Phe Thr Cys Ser Phe Asp Leu Ala Ile Lys Gly Val Lys Ser Pro
                    290   295   300

Trp Cys Asp Val Phe Asp Ile Asp Asp Ala Lys Val Leu Glu Tyr
                    305   310   315

Leu Asn Asp Leu Lys Gln Tyr Trp Lys Arg Gly Tyr Gly Tyr Thr
                    320   325   330

Ile Asn Ser Arg Ser Ser Cys Thr Leu Phe Gln Asp Ile Phe Gln
                    335   340   345

His Leu Asp Lys Ala Val Glu Gln Lys Gln Arg Ser Gln Pro Ile
                    350   355   360

Ser Ser Pro Val Ile Leu Gln Phe Gly His Ala Glu Thr Leu Leu
                    365   370   375

Pro Leu Leu Ser Leu Met Gly Tyr Phe Lys Asp Lys Glu Pro Leu
                    380   385   390

Thr Ala Tyr Asn Tyr Lys Lys Gln Met His Arg Lys Phe Arg Ser
                    395   400   405

20

Gly Leu Ile Val Pro Tyr Ala Ser Asn Leu Ile Phe Val Leu Tyr
            410   415   420

His Cys Glu Asn Ala Lys Thr Pro Lys Glu Gln Phe Arg Val Gln
            425   430   435

Met Leu Leu Asn Glu Lys Val Leu Pro Leu Ala Tyr Ser Gln Glu
            440   445   450

Thr Val Ser Phe Tyr Glu Asp Leu Lys Asn His Tyr Lys Asp Ile
            455   460   465

Leu Gln Ser Cys Gln Thr Ser Glu Glu Cys Glu Leu Ala Arg Ala
            470   475   480

Asn Ser Thr Ser Asp Glu Leu
            485

<210> 19
<211> 3554
<212> DNA
<213> Homo sapiens

<400> 19
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 cttcttcctg ctgctgcttt tcaggggctg cctgataggg gctgtaaatc 150

 tcaaatccag caatcgaacc ccagtggtac aggaatttga aagtgtggaa 200

 ctgtcttgca tcattacgga ttcgcagaca agtgacccca ggatcgagtg 250

 gaagaaaatt caagatgaac aaaccacata tgtgtttttt gacaacaaaa 300

 ttcagggaga cttggcgggt cgtgcagaaa tactggggaa gacatccctg 350

 aagatctgga atgtgacacg gagagactca gccctttatc gctgtgaggt 400

 cgttgctcga aatgaccgca aggaaattga tgagattgtg atcgagttaa 450

 ctgtgcaagt gaagccagtg acccctgtct gtagagtgcc gaaggctgta 500

 ccagtaggca agatggcaac actgcactgc caggagagtg agggccaccc 550

 ccggcctcac tacagctggt atcgcaatga tgtaccactg cccacggatt 600

 ccagagccaa tcccagattt cgcaattctt ctttccactt aaactctgaa 650

 acaggcactt tggtgttcac tgctgttcac aaggacgact ctgggcagta 700

 ctactgcatt gcttccaatg acgcaggctc agccaggtgt gaggagcagg 750

 agatggaagt ctatgacctg aacattggcg gaattattgg ggggggttctg 800

 gttgtccttg ctgtactggc cctgatcacg ttgggcatct gctgtgcata 850

21

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cagacgtggc tacttcatca acaataaaca ggatggagaa agttacaaga 900

acccagggaa accagatgga gttaactaca tccgcactga cgaggagggc 950

gacttcagac acaagtcatc gtttgtgatc tgagacccgc ggtgtggctg 1000

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tgtaaaaaca accaaaatca ggaaggtaaa ttggttgctg gaagagggat 1600

cttgcctgag gaaccctgct tgtccaacag ggtgtcagga tttaaggaaa 1650

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ttttacccaa ggaatcctct catggaagtt tactgtgatg ttccttttct 1950

cacacaagtt ttagcctttt tcacaaggga actcatactg tctacacatc 2000

agaccatagt tgcttaggaa acctttaaaa attccagtta agcaatgttg 2050

aaatcagttt gcatctcttc aaaagaaacc tctcaggtta gctttgaact 2100

gcctcttcct gagatgacta ggacagtctg tacccagagg ccacccagaa 2150

gccctcagat gtacatacac agatgccagt cagctcctgg ggttgcgcca 2200

ggcgcccccg ctctagctca ctgttgcctc gctgtctgcc aggaggccct 2250

gccatccttg ggccctggca gtggctgtgt cccagtgagc tttactcacg 2300
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22

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cccactgttc ctctttgcca cagagaaagc acccagacgc cacaggctct 2600

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tgaaacgcct gaatcaaaag cagttttcta attttgactt taaattttc 2750

atccgccgga gacactgctc ccatttgtgg ggggacatta gcaacatcac 2800

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gtagctgcct ataactgaga ctagacggaa aaggaatact cgtgtatttt 3400

aagatatgaa tgtgactcaa gactcgaggc cgatacgagg ctgtgattct 3450

gcctttggat ggatgttgct gtacacagat gctacagact tgtactaaca 3500

caccgtaatt tggcatttgt ttaacctcat ttataaaagc ttcaaaaaaa 3550

ccca 3554
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<210> 20
<211> 310
<212> PRT
<213> Homo sapiens

<400> 20

23

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Met Ala Leu Arg Arg Pro Pro Arg Leu Arg Leu Cys Ala Arg Leu
 1            5                  10                    15

Pro Asp Phe Phe Leu Leu Leu Leu Phe Arg Gly Cys Leu Ile Gly
                20                  25                    30

Ala Val Asn Leu Lys Ser Ser Asn Arg Thr Pro Val Val Gln Glu
                35                  40                    45

Phe Glu Ser Val Glu Leu Ser Cys Ile Ile Thr Asp Ser Gln Thr
                50                  55                    60

Ser Asp Pro Arg Ile Glu Trp Lys Lys Ile Gln Asp Glu Gln Thr
                65                  70                    75

Thr Tyr Val Phe Phe Asp Asn Lys Ile Gln Gly Asp Leu Ala Gly
                80                  85                    90

Arg Ala Glu Ile Leu Gly Lys Thr Ser Leu Lys Ile Trp Asn Val
                95                  100                   105

Thr Arg Arg Asp Ser Ala Leu Tyr Arg Cys Glu Val Val Ala Arg
                110                 115                   120

Asn Asp Arg Lys Glu Ile Asp Glu Ile Val Ile Glu Leu Thr Val
                125                 130                   135

Gln Val Lys Pro Val Thr Pro Val Cys Arg Val Pro Lys Ala Val
                140                 145                   150

Pro Val Gly Lys Met Ala Thr Leu His Cys Gln Glu Ser Glu Gly
                155                 160                   165

His Pro Arg Pro His Tyr Ser Trp Tyr Arg Asn Asp Val Pro Leu
                170                 175                   180

Pro Thr Asp Ser Arg Ala Asn Pro Arg Phe Arg Asn Ser Ser Phe
                185                 190                   195

His Leu Asn Ser Glu Thr Gly Thr Leu Val Phe Thr Ala Val His
                200                 205                   210

Lys Asp Asp Ser Gly Gln Tyr Tyr Cys Ile Ala Ser Asn Asp Ala
                215                 220                   225

Gly Ser Ala Arg Cys Glu Glu Gln Glu Met Glu Val Tyr Asp Leu
                230                 235                   240

Asn Ile Gly Gly Ile Ile Gly Gly Val Leu Val Val Leu Ala Val
                245                 250                   255

Leu Ala Leu Ile Thr Leu Gly Ile Cys Cys Ala Tyr Arg Arg Gly
                260                 265                   270

Tyr Phe Ile Asn Asn Lys Gln Asp Gly Glu Ser Tyr Lys Asn Pro
                275                 280                   285

Gly Lys Pro Asp Gly Val Asn Tyr Ile Arg Thr Asp Glu Glu Gly
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24

Asp Phe Arg His Lys Ser Ser Phe Val Ile
                    305   310

<210> 21
<211> 3437
<212> DNA
<213> Homo sapiens

<400> 21
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 gagccgacga cagcgagttc caggcgctgc tggacatctg gtttccggag 150

 gagaagccac tgcccaccgc cttcctggtg gacacatcgg aggaggcgct 200

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 gcctggtgga cgccgccctg caggacctgg agccgcagca gctgctgctg 300

 ttcgtgcagt cgtttggcat ccccgtgtcc agcatgagca aactcctcca 350

 gttcctggac caggcagtgg cccacgaccc ccagactctg gagcagaaca 400

 tcatggacaa gaattacatg gcccacctgg tggaggtcca gcatgagcgc 450

 ggcgcctccg gaggccagac tttccactcc ttgctcacag cctccctgcc 500

 gccccgccga gacagcacag aggcacccaa accaaagagc agcccagagc 550

 agcccatagg ccagggccgg attcgggtgg ggacccagct ccgggtgctg 600

 ggccctgagg acgacctggc tggcatgttc ctccagattt tcccgctcag 650

 cccggaccct cggtggcaga gctccagtcc ccgcccgtg gccctcgccc 700

 tgcagcaggc cctgggccag gagctggccc gcgtcgtcca gggcagcccc 750

 gaggtgccgg gcatcacggt gcgtgtcctg caggccctcg ccaccctgct 800

 cagctcccca cacggcggtg ccctggtgat gtccatgcac cgtagccact 850

 tcctggcctg cccgctgctg cgccagctct gccagtacca gcgctgtgtg 900

 ccacaggaca ccggcttctc ctcgctcttc ctgaaggtgc tcctgcagat 950

 gctgcagtgg ctggacagcc ctggcgtgga gggcgggccc ctgcgggcac 1000

 agctcaggat gcttgccagc caggcctcag ccgggcgcag gctcagtgat 1050

 gtgcgagggg ggctcctgcg cctggccgag gccctggcct tccgtcagga 1100

 cctggaggtg gtcagctcca ccgtccgtgc cgtcatcgcc accctgaggt 1150

 ctggggagca gtgcagcgtg gagccggacc tgatcagcaa agtcctccag 1200

25

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ttgtggtggt gagctccctg ctgctgcagg aggaggagcc cctggctggg 1350

gggaagccgg gtgcggacgg tggcagcctg gaggccgtgc ggctggggcc 1400

ctcgtcaggc ctcctagtgg actggctgga aatgctggac cccgaggtgg 1450

tcagcagctg ccccgacctg cagctcaggc tgctcttctc ccggaggaag 1500

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ttcctctggg cctgcatcca tgttcctcgc atctggcagg ggcgggacca 1700

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gcagcgtctg caagctggac ggactcatcc accgcttcat cacgctcctt 2100

gcggacacca gcgactcccg ggcgttggag aaccgagggg cggatgccag 2150

catggcctgc cggaagctgg cggtggcgca cccgctgctg ctgctcaggc 2200

acctgcccat gatcgcggcg ctcctgcacg gccgcacccca cctcaacttc 2250

caggagttcc ggcagcagaa ccacctgagc tgcttcctgc acgtgctggg 2300

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cgctgtggga ctgccttctg tccttcatcc gcctgctgct gaattacagg 2400

aagtcctccc gccatctggc tgccttcatc aacaagtttg tgcagttcat 2450

ccataagtac attacctaca atgccccagc agccatctcc ttcctgcaga 2500

agcacgccga cccgctccac gacctgtcct tcgacaacag tgacctggtg 2550

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gaccgaccga ggcctggacg aagagggcga ggaggagagc tcagccggct 2650
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ccttgcccct ggtcagcgtc tccctgttca cccctctgac cgcggccgag 2700

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tcctgagctt cttctcgacc aacctgcagc ggctgatgag ctcggccgag 2850

gagtgttgcc gcaacctcgc cttcagcctg gccctgcgct ccatgcagaa 2900

cagccccagc attgcagccg ctttcctgcc cacgttcatg tactgcctgg 2950

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ctccgggccg gccgctggca tcaggggccg tccagcaagc cctcattcac 3350

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<210> 22
<211> 1029
<212> PRT
<213> Homo sapiens

<400> 22
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Met His Ile Leu Val Val His Ala Met Val Ile Leu Leu Thr Leu
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Gly Pro Pro Arg Ala Asp Asp Ser Glu Phe Gln Ala Leu Leu Asp
                  20                  25                  30

Ile Trp Phe Pro Glu Glu Lys Pro Leu Pro Thr Ala Phe Leu Val
                  35                  40                  45

Asp Thr Ser Glu Glu Ala Leu Leu Leu Pro Asp Trp Leu Lys Leu
                  50                  55                  60

Arg Met Ile Arg Ser Glu Val Leu Arg Leu Val Asp Ala Ala Leu
                  65                  70                  75

Gln Asp Leu Glu Pro Gln Gln Leu Leu Leu Phe Val Gln Ser Phe
                  80                  85                  90

Gly Ile Pro Val Ser Ser Met Ser Lys Leu Leu Gln Phe Leu Asp
                  95                  100                 105
```

27

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Gln Ala Val Ala His Asp Pro Gln Thr Leu Glu Gln Asn Ile Met
                110             115             120

Asp Lys Asn Tyr Met Ala His Leu Val Glu Val Gln His Glu Arg
                125             130             135

Gly Ala Ser Gly Gly Gln Thr Phe His Ser Leu Leu Thr Ala Ser
                140             145             150

Leu Pro Pro Arg Arg Asp Ser Thr Glu Ala Pro Lys Pro Lys Ser
                155             160             165

Ser Pro Glu Gln Pro Ile Gly Gln Gly Arg Ile Arg Val Gly Thr
                170             175             180

Gln Leu Arg Val Leu Gly Pro Glu Asp Asp Leu Ala Gly Met Phe
                185             190             195

Leu Gln Ile Phe Pro Leu Ser Pro Asp Pro Arg Trp Gln Ser Ser
                200             205             210

Ser Pro Arg Pro Val Ala Leu Ala Leu Gln Gln Ala Leu Gly Gln
                215             220             225

Glu Leu Ala Arg Val Val Gln Gly Ser Pro Glu Val Pro Gly Ile
                230             235             240

Thr Val Arg Val Leu Gln Ala Leu Ala Thr Leu Leu Ser Ser Pro
                245             250             255

His Gly Gly Ala Leu Val Met Ser Met His Arg Ser His Phe Leu
                260             265             270

Ala Cys Pro Leu Leu Arg Gln Leu Cys Gln Tyr Gln Arg Cys Val
                275             280             285

Pro Gln Asp Thr Gly Phe Ser Ser Leu Phe Leu Lys Val Leu Leu
                290             295             300

Gln Met Leu Gln Trp Leu Asp Ser Pro Gly Val Glu Gly Gly Pro
                305             310             315

Leu Arg Ala Gln Leu Arg Met Leu Ala Ser Gln Ala Ser Ala Gly
                320             325             330

Arg Arg Leu Ser Asp Val Arg Gly Gly Leu Leu Arg Leu Ala Glu
                335             340             345

Ala Leu Ala Phe Arg Gln Asp Leu Glu Val Val Ser Ser Thr Val
                350             355             360

Arg Ala Val Ile Ala Thr Leu Arg Ser Gly Glu Gln Cys Ser Val
                365             370             375

Glu Pro Asp Leu Ile Ser Lys Val Leu Gln Gly Leu Ile Glu Val
                380             385             390

Arg Ser Pro His Leu Glu Glu Leu Leu Thr Ala Phe Phe Ser Ala
```

28

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                   395                  400                    405
    Thr Ala Asp Ala Ala Ser Pro Phe Pro Ala Cys Lys Pro Val Val
                   410                  415                    420

    Val Val Ser Ser Leu Leu Leu Gln Glu Glu Glu Pro Leu Ala Gly
                   425                  430                    435

    Gly Lys Pro Gly Ala Asp Gly Gly Ser Leu Glu Ala Val Arg Leu
                   440                  445                    450

    Gly Pro Ser Ser Gly Leu Leu Val Asp Trp Leu Glu Met Leu Asp
                   455                  460                    465

    Pro Glu Val Val Ser Ser Cys Pro Asp Leu Gln Leu Arg Leu Leu
                   470                  475                    480

    Phe Ser Arg Arg Lys Gly Lys Gly Gln Ala Gln Val Pro Ser Phe
                   485                  490                    495

    Arg Pro Tyr Leu Leu Thr Leu Phe Thr His Gln Ser Ser Trp Pro
                   500                  505                    510

    Thr Leu His Gln Cys Ile Arg Val Leu Leu Gly Lys Ser Arg Glu
                   515                  520                    525

    Gln Arg Phe Asp Pro Ser Ala Ser Leu Asp Phe Leu Trp Ala Cys
                   530                  535                    540

    Ile His Val Pro Arg Ile Trp Gln Gly Arg Asp Gln Arg Thr Pro
                   545                  550                    555

    Gln Lys Arg Arg Glu Glu Leu Val Leu Arg Val Gln Gly Pro Glu
                   560                  565                    570

    Leu Ile Ser Leu Val Glu Leu Ile Leu Ala Glu Ala Glu Thr Arg
                   575                  580                    585

    Ser Gln Asp Gly Asp Thr Ala Ala Cys Ser Leu Ile Gln Ala Arg
                   590                  595                    600

    Leu Pro Leu Leu Leu Ser Cys Cys Cys Gly Asp Asp Glu Ser Val
                   605                  610                    615

    Arg Lys Val Thr Glu His Leu Ser Gly Cys Ile Gln Gln Trp Gly
                   620                  625                    630

    Asp Ser Val Leu Gly Arg Arg Cys Arg Asp Leu Leu Leu Gln Leu
                   635                  640                    645

    Tyr Leu Gln Arg Pro Glu Leu Arg Val Pro Val Pro Glu Val Leu
                   650                  655                    660

    Leu His Ser Glu Gly Ala Ala Ser Ser Ser Val Cys Lys Leu Asp
                   665                  670                    675

    Gly Leu Ile His Arg Phe Ile Thr Leu Leu Ala Asp Thr Ser Asp
                   680                  685                    690
                    .
```

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Ser Arg Ala Leu Glu Asn Arg Gly Ala Asp Ala Ser Met Ala Cys
                695             700             705

Arg Lys Leu Ala Val Ala His Pro Leu Leu Leu Leu Arg His Leu
                710             715             720

Pro Met Ile Ala Ala Leu Leu His Gly Arg Thr His Leu Asn Phe
                725             730             735

Gln Glu Phe Arg Gln Gln Asn His Leu Ser Cys Phe Leu His Val
                740             745             750

Leu Gly Leu Leu Glu Leu Leu Gln Pro His Val Phe Arg Ser Glu
                755             760             765

His Gln Gly Ala Leu Trp Asp Cys Leu Leu Ser Phe Ile Arg Leu
                770             775             780

Leu Leu Asn Tyr Arg Lys Ser Ser Arg His Leu Ala Ala Phe Ile
                785             790             795

Asn Lys Phe Val Gln Phe Ile His Lys Tyr Ile Thr Tyr Asn Ala
                800             805             810

Pro Ala Ala Ile Ser Phe Leu Gln Lys His Ala Asp Pro Leu His
                815             820             825

Asp Leu Ser Phe Asp Asn Ser Asp Leu Val Met Leu Lys Ser Leu
                830             835             840

Leu Ala Gly Leu Ser Leu Pro Ser Arg Asp Asp Arg Thr Asp Arg
                845             850             855

Gly Leu Asp Glu Glu Gly Glu Glu Glu Ser Ser Ala Gly Ser Leu
                860             865             870

Pro Leu Val Ser Val Ser Leu Phe Thr Pro Leu Thr Ala Ala Glu
                875             880             885

Met Ala Pro Tyr Met Lys Arg Leu Ser Arg Gly Gln Thr Val Glu
                890             895             900

Asp Leu Leu Glu Val Leu Ser Asp Ile Asp Glu Met Ser Arg Arg
                905             910             915

Arg Pro Glu Ile Leu Ser Phe Phe Ser Thr Asn Leu Gln Arg Leu
                920             925             930

Met Ser Ser Ala Glu Glu Cys Cys Arg Asn Leu Ala Phe Ser Leu
                935             940             945

Ala Leu Arg Ser Met Gln Asn Ser Pro Ser Ile Ala Ala Ala Phe
                950             955             960

Leu Pro Thr Phe Met Tyr Cys Leu Gly Ser Gln Asp Phe Glu Val
                965             970             975

Val Gln Thr Ala Leu Arg Asn Leu Pro Glu Tyr Ala Leu Leu Cys
```

30

Gln Glu His Ala Ala Val Leu Leu His Arg Ala Phe Leu Val Gly
                995   1000   1005

Met Tyr Gly Gln Met Asp Pro Ser Ala Gln Ile Ser Glu Ala Leu
                1010   1015   1020

Arg Ile Leu His Met Glu Ala Val Met
                1025

<210> 23
<211> 2186
<212> DNA
<213> Homo sapiens

<400> 23
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cgccttcctc tcgctgtcct ggtacgcggc actcagcggc cagaaaggcg 150

acgttgtgga cgtttaccag cgggagttcc tggcgctgcg cgatcggttg 200

cacgcagctg agcaggagag cctcaagcgc tccaaggagc tcaacctggt 250

gctggacgag atcaagaggg ccgtgtcaga aaggcaggcg ctgcgagacg 300

gagacggcaa tcgcacctgg ggccgcctaa cagaggaccc ccgattgaag 350

ccgtggaacg gctcacaccg gcacgtgctg cacctgccca ccgtcttcca 400

tcacctgcca cacctgctgg ccaaggagag cagtctgcag cccgcggtgc 450

gcgtgggcca gggccgcacc ggagtgtcgg tggtgatggg catcccgagc 500

gtgcggcgcg aggtgcactc gtacctgact gacactctgc actcgctcat 550

ctccgagctg agcccgcagg agaaggagga ctcggtcatc gtggtgctga 600

tcgccgagac tgactcacag tacacttcgg cagtgacaga gaacatcaag 650

gccttgttcc ccacggagat ccattctggg ctcctggagg tcatctcacc 700

ctccccccac ttctaccctg acttctcccg cctccgagag tcctttgggg 750

accccaagga gagagtcagg tggaggacca aacagaacct cgattactgc 800

ttcctcatga tgtacgcgca gtccaaaggc atctactacg tgcagctgga 850

ggatgacatc gtggccaagc ccaactacct gagcaccatg aagaactttg 900

cactgcagca gccttcagag gactggatga tcctggagtt ctcccagctg 950

ggcttcattg gtaagatgtt caagtcgctg gacctgagcc tgattgtaga 1000

gttcattctc atgttctacc gggacaagcc catcgactgg ctcctggacc 1050

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atattctgtg ggtgaaagtc tgcaaccccg agaaggatgc gaagcactgt 1100

gaccggcaga aagccaacct gcggatccgc ttcaaaccgt ccctcttcca 1150

gcacgtgggc actcactcct cgctggctgg caagatccag aaactgaagg 1200

acaaagactt tggaaagcag gcgctgcgga aggagcatgt gaacccgcca 1250

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ttccgcagtg ggaacatcga gcacccggag gacaagctct tcaacacgtc 1450

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aggagggccg caccgccacc ctccggtacc ctcggagccc cgacggctac 1550

ctccagatcg gctccttcta caagggagtg gcagagggag aggtggaccc 1600

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caggcggccc ccacactgtg cctgaggccc ggaaccgttc gcacccggcc 1950

tgccccagtc aggccgtttt agaagagctt ttacttgggc gcccgccgtc 2000

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attcttggat acatttgatt ttttcacgta agtccacata tacttctata 2100

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<210> 24
<211> 548
<212> PRT
<213> Homo sapiens

<400> 24
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 Leu Cys Ala Phe Leu Ser Leu Ser Trp Tyr Ala Ala Leu Ser Gly
                  20                  25                  30
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32

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Gln Lys Gly Asp Val Val Asp Val Tyr Gln Arg Glu Phe Leu Ala
            35              40                      45

Leu Arg Asp Arg Leu His Ala Ala Glu Gln Glu Ser Leu Lys Arg
            50              55                      60

Ser Lys Glu Leu Asn Leu Val Leu Asp Glu Ile Lys Arg Ala Val
            65              70                      75

Ser Glu Arg Gln Ala Leu Arg Asp Gly Asp Gly Asn Arg Thr Trp
            80              85                      90

Gly Arg Leu Thr Glu Asp Pro Arg Leu Lys Pro Trp Asn Gly Ser
            95              100                     105

His Arg His Val Leu His Leu Pro Thr Val Phe His His Leu Pro
            110             115                     120

His Leu Leu Ala Lys Glu Ser Ser Leu Gln Pro Ala Val Arg Val
            125             130                     135

Gly Gln Gly Arg Thr Gly Val Ser Val Val Met Gly Ile Pro Ser
            140             145                     150

Val Arg Arg Glu Val His Ser Tyr Leu Thr Asp Thr Leu His Ser
            155             160                     165

Leu Ile Ser Glu Leu Ser Pro Gln Glu Lys Glu Asp Ser Val Ile
            170             175                     180

Val Val Leu Ile Ala Glu Thr Asp Ser Gln Tyr Thr Ser Ala Val
            185             190                     195

Thr Glu Asn Ile Lys Ala Leu Phe Pro Thr Glu Ile His Ser Gly
            200             205                     210

Leu Leu Glu Val Ile Ser Pro Ser Pro His Phe Tyr Pro Asp Phe
            215             220                     225

Ser Arg Leu Arg Glu Ser Phe Gly Asp Pro Lys Glu Arg Val Arg
            230             235                     240

Trp Arg Thr Lys Gln Asn Leu Asp Tyr Cys Phe Leu Met Met Tyr
            245             250                     255

Ala Gln Ser Lys Gly Ile Tyr Tyr Val Gln Leu Glu Asp Asp Ile
            260             265                     270

Val Ala Lys Pro Asn Tyr Leu Ser Thr Met Lys Asn Phe Ala Leu
            275             280                     285

Gln Gln Pro Ser Glu Asp Trp Met Ile Leu Glu Phe Ser Gln Leu
            290             295                     300

Gly Phe Ile Gly Lys Met Phe Lys Ser Leu Asp Leu Ser Leu Ile
            305             310                     315

Val Glu Phe Ile Leu Met Phe Tyr Arg Asp Lys Pro Ile Asp Trp
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33

    Leu Leu Asp His Ile Leu Trp Val Lys Val Cys Asn Pro Glu Lys
                    335   340   345

    Asp Ala Lys His Cys Asp Arg Gln Lys Ala Asn Leu Arg Ile Arg
                    350   355   360

    Phe Lys Pro Ser Leu Phe Gln His Val Gly Thr His Ser Ser Leu
                    365   370   375

    Ala Gly Lys Ile Gln Lys Leu Lys Asp Lys Asp Phe Gly Lys Gln
                    380   385   390

    Ala Leu Arg Lys Glu His Val Asn Pro Pro Ala Glu Val Ser Thr
                    395   400   405

    Ser Leu Lys Thr Tyr Gln His Phe Thr Leu Glu Lys Ala Tyr Leu
                    410   415   420

    Arg Glu Asp Phe Phe Trp Ala Phe Thr Pro Ala Ala Gly Asp Phe
                    425   430   435

    Ile Arg Phe Arg Phe Phe Gln Pro Leu Arg Leu Glu Arg Phe Phe
                    440   445   450

    Phe Arg Ser Gly Asn Ile Glu His Pro Glu Asp Lys Leu Phe Asn
                    455   460   465

    Thr Ser Val Glu Val Leu Pro Phe Asp Asn Pro Gln Ser Asp Lys
                    470   475   480

    Glu Ala Leu Gln Glu Gly Arg Thr Ala Thr Leu Arg Tyr Pro Arg
                    485   490   495

    Ser Pro Asp Gly Tyr Leu Gln Ile Gly Ser Phe Tyr Lys Gly Val
                    500   505   510

    Ala Glu Gly Glu Val Asp Pro Ala Phe Gly Pro Leu Glu Ala Leu
                    515   520   525

    Arg Leu Ser Ile Gln Thr Asp Ser Pro Val Trp Val Ile Leu Ser
                    530   535   540

    Glu Ile Phe Leu Lys Lys Ala Asp
                    545

<210> 25
<211> 43
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Oligonucleotide Probe

<400> 25
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<210> 26
<211> 41
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Oligonucleotide Probe

<400> 26
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<210> 27
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Oligonucleotide Probe

<400> 27
 actcgggatt cctgctgtt 19

<210> 28
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Oligonucleotide Probe

<400> 28
 aggcctttac ccaaggccac aac 23

<210> 29
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Oligonucleotide Probe

<400> 29
 ggcctgtcct gtgttctca 19

<210> 30
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Oligonucleotide Probe

<400> 30
 tcccaccact tacttccatg aa 22

<210> 31
<211> 25
<212> DNA
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<213> Artificial Sequence

<220>
<223> Synthetic Oligonucleotide Probe

<400> 31
 ctgtggtacc caattgccgc cttgt 25

<210> 32
<211> 23
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<220>
<223> Synthetic Oligonucleotide Probe

<400> 32
 attgtcctga gattcgagca aga 23

<210> 33
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Oligonucleotide Probe

<400> 33
 gtccagcaag ccctcatt 18

<210> 34
<211> 20
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<220>
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<400> 34
 cttctgggcc acagccctgc 20

<210> 35
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<400> 35
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<210> 36
<211> 19
<212> DNA
<213> Artificial Sequence

<220>

<223> Synthetic Oligonucleotide Probe

<400> 36
 ccagtcaggc cgtttttaga 19

<210> 37
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Oligonucleotide Probe

<400> 37
 cgggcgccca agtaaaagct c 21

<210> 38
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Oligonucleotide Probe

<400> 38
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